



## **WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** 2005DE62B

**Title:** Restoring Coastal Bay Water Quality via Native Eelgrass Micropropagation

**Project Type:** Research

**Focus Categories:** Non Point Pollution, Ecology, Management and Planning

**Keywords:** None

**Start Date:** 05/01/2005

**End Date:** 02/28/2006

**Federal Funds:** \$1,750

**Non-Federal Matching Funds:** \$3,500

**Congressional District:** At Large

**Principal Investigators:**

None

### **Abstract**

The importance of a thriving eelgrass community (*Zostera marina*) to our coastal ecology and water quality is truly extraordinary. Eelgrass is responsible for improving water quality. *Zostera* beds take up a substantial amount of nutrients from both the sediment and water column which reduces nutrient loads. The physical structure of the plant stabilizes substrate and dissipates waves which reduce turbulence and therefore turbidity. Furthermore, *Zostera* is an important primary producer and serves as a substrate for epiphytes and epizootics which are important in food webs. As a habitat for marine life, *Zostera* provides a nursery for a wide array of both ecologically and economically important species such as juvenile crabs, larval fish, and clams.

In the late 1930's, our coasts experienced a die-off of *Zostera* due to "wasting disease". Recovery of the plant populations has been slow due to changes to the environment and water quality subsequent to the loss. Recognizing the vital ecological role seagrass communities hold in estuarine environments, restoration projects have been globally underway. However, it is difficult to get plant material for the effort and these transplants are not always successful. In the absence of a thriving seagrass community, water quality has often deteriorated to such a point that it is difficult to re-establish plants brought in from other locations. Once minimum water quality for plant growth can be achieved by runoff and discharge control, seagrass beds can be established and water quality and

habitat further enhanced. In Delaware, Mr. Ben Anderson of the Water Resources Division of DNREC has been working on restoring *Zostera* beds in the Inland Bays. In many bays, sources of local plant material are scarce if not non-existent, thus creating a need to go to distant locales for propagules to establish beds. Increasingly, estuary managers are reluctant to allow the removal of plants or seeds for the restoration of seagrass beds in other areas. This project is focused on solving the propagule shortage problem and working toward improving intra-specific genetic diversity.